UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,409	01/23/2002	Maria Palasis	104914.132US2	1618

388 7590 05/31/2006

FULBRIGHT & JAWORSKI
MARKET SQUARE
801 PENNSLYVANIA, N.W.
WASHINGTON, DC 200042604

EXAMINER	
KELLY, ROBERT M	

ART UNIT	PAPER NUMBER
1633	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/057,409	PALASIS, MARIA	
	Examiner	Art Unit	
	Robert M. Kelly	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-11,15-38,40-48 and 50-54* is/are pending in the application.

4a) Of the above claim(s) *4-11, 16, 18, 20-22, 26-37, 41-47* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15,17,19,23-25,38,40,50,51 and 54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's arguments of 3/21/06 and the response and amendments of 3/30/06 are entered.

Claims 12-14, 39, and 49 are cancelled.

Claims 15, 17, 19, 38, 40, 50-51, and 54 are amended.

Claims 4-11, 15-38, 40-48, and 50-54 are presently pending.

Election/Restrictions

In keeping with the prior restriction requirement, Claims 15, 17, 19, 23-25, 38, 40, 50-51, and 54 are presently considered.

Claim Status, Cancelled Claims

In light of Applicant's cancellation of Claims 12-14, 39, and 49, all rejections and/or objections to such claims are withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

In light of Applicant's arguments, the prior rejections of Claims 15, 17, 19, and 23-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, are withdrawn.

Applicant argues, in a very oblique manner, that their claims embrace all cells, as all cells either already do, or can be made to express angiogenic factors, by way of transformation. And further, the artisan would be aware of those cell types which are not capable of such expression, due to loss of transcription, or otherwise, e.g., Red Blood Cells of mammals.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 15, 17, 19, 23-25, 38, 40, 50-51, and 54 remain rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the intramyocardial delivery of autologous mesenchymal stem cells modified *ex vivo* to express an angiogenic factor via a constitutive promoter operatively linked to a sequence encoding an angiogenic factor, to normal tissue adjacent to ischemic tissue in the myocardium, does not reasonably provide enablement for the administration of any cell type or delivery of such cells to tissues not adjacent to the ischemic tissue or the absence of a transgene, any non-constitutive promoters or the use of any transgene in any cell type, for reasons of record.

Response to Argument - Enablement

Applicant's argument of 3/21/06 has been fully considered, but is not found persuasive.

Applicant argues that the Examiner's contention that cells must engraft to achieve their desired is not correct, because two post-filing date articles argue that effects other than

incorporation may contribute to collateral remodeling after marrow-derived cell therapy in various models of ischemia (pp. 10-11, paragraph bridging).

Such is not persuasive. First, these articles are post-filing date articles, and demonstrate a new finding, and even then, the Authors use the terminology "**may** contribute to collateral remodeling", as per Applicant's quote. Hence, at the time of invention it was still not reasonably predictable. Second, the articles are limited to MSCs, and not to any cell type. To wit, it is still not reasonably predictable that non-MSCs would even engraft into the tissue in large enough amounts to have an effect (e.g., Official Action of 9/21/05, pp. 9-11). Third, immune responses to non-autologous cells would be expected, even if they did engraft (Id., p. 10). Fourth, Although Applicant argues to have supplied such articles, no such articles are found in the response, and hence, the articles themselves have not been considered. Hence, even in view of Applicant's disclosed article, the breadth of these claims are still not any more than the enablement given.

Applicant cites another post-filing-date article to argue that it was shown that HUVEC reduce infarction size in rats without requirements for immunosuppression (pp. 11-12, paragraph bridging).

Such is not perasuasive. First, this article is post-filing date, and contains novel information, which was not known in the Art at the time of invention by Applicant. Second, Applicant did not supply this article to the Examiner for consideration with regard to Applicant's argument. Third, given the analysis of the Examiner given in the previous official actions, the Artisan would not believe such results, with specific cells and a specific rat type, would reasonably predict treatment of any cell type. Fourth, the Artisan would not reasonably predict

this treatment to be effective in xenogenic treatments of any animal, for reasons of record. Lastly, it is noted that Applicant's specification has no direction or guidance to use HUVEC in rats.

Applicant argues that the injection to other sites, other than the myocardium, are reasonably predicted, because it is not required for such cells to replace the ischemic tissue, but only the delivery of angiogenic factors into the region (p. 12).

Such is not persuasive. As was argued by the Examiner, it has previously been shown that other adenovirus vectors have delivered angiogenic factors to cells further than immediately adjacent to the ischemic tissue, and despite delivering appreciable angiogenic factor the site, no treatment was shown (Official Action of 9/21/05, p. 11, paragraph 3). Hence, the Examiner is left to consider why such treatment did not work, after all, as in Applicant's argument, the factor was delivered to the site required, just like Applicant's argument. Two answers may come to mind: either (i) the factor was not enough, or (ii) the cells themselves are required to engraft and become replacing tissue. Either way, the cells must be close enough to deliver enough factor and/or become replacing tissue. Therefore, the answer to the argument is that the cells must be delivered to sites immediately adjacent, i.e., within the myocardium. Therefore, despite the absence of a requirement for engraftment in Applicant's claims, the Artisan would still not find this aspect to be enabled for its fully claimed scope.

Applicant broadly argues that the claims are enabled for their scope (p. 13).

Such is not persuasive. Attorney argument does not supplant scientific evidence or reasoning to demonstrate flaws in the Examiner's argument.

Applicant argues that it would not require undue experimentation from Applicant's demonstration, to use cells expressing angiogenic factors to see if the treatment is effective (pp. 13-14).

Such is not persuasive. Given the analysis of enablement, the Artisan would have to perform such experimentation to reasonably predict the working embodiments embraced, and hence, such experimentation is undue, amounting to inventing Applicant's invention for Applicant.

Applicant explains that wall motion improvement is predictive of increased contractile heart function, citing an unsupplied article.

The Examiner thanks Applicant for the explanation, however such article is not supplied so it is not considered.

Hence, the claims remain non-enabled for their fully claimed scope, for reasons of record.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Kelly, Art Unit 1633, whose telephone number is (571) 272-0729. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nguyen can be reached on (571) 272-0731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert M. Kelly, Ph.D.
Examiner, USPTO, AU 1633
2C55 Remsen Building
(571) 272-0729

Joe Woitach
AU 1632